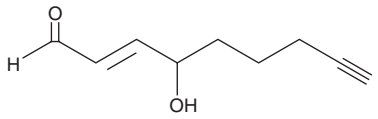
PRODUCT INFORMATION

4-hydroxy Nonenal Alkyne

Item No. 13265

CAS Registry No.: 1011268-23-7
Formal Name: 4-hydroxynon-2E-nonen-8-ynal
Synonyms: Click Tag™ 4-HNE Alkyne
MF: $C_9H_{12}O_2$
FW: 152.2
Purity: ≥98%
UV/Vis.: λ_{max}: 220 nm
Supplied as: A solution in methyl acetate
Storage: -80°C
Stability: ≥1 year



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

4-hydroxy Nonenal (4-HNE) alkyne is supplied as a solution in methyl acetate. To change the solvent, simply evaporate the methyl acetate under a gentle stream of nitrogen and immediately add the solvent of choice. Solvents such as ethanol, DMSO, and dimethyl formamide purged with an inert gas can be used. The solubility of 4-HNE alkyne in these solvents is approximately 12.5, 2, and 2.5 mg/ml, respectively.

4-HNE alkyne is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, the methyl acetate solution of 4-HNE alkyne should be diluted with the aqueous buffer of choice. The solubility of 4-HNE alkyne in PBS (pH 7.2) is approximately 5 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

4-HNE is a major aldehyde produced during the lipid peroxidation of ω-6 polyunsaturated fatty acids, such as arachidonic acid and linoleic acid.[1,2] It is considered a potential causal agent in numerous diseases, including chronic inflammation, neurodegenerative diseases, atherosclerosis, diabetes, and cancer, in part because it covalently modifies DNA and proteins resulting in genetic mutations and altered cell signaling, respectively.[3] 4-HNE alkyne is a form of 4-HNE with a terminal alkyne. Such terminal alkyne groups can be used in linking reactions, known as click chemistry, characterized by high dependability and specificity of azide-alkyne bioconjugation reactions.[4,5]

References

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2. Esterbauer, H., Schaur, R.J., and Zoliner, H. Chemistry and biochemistry of 4-hydroxynonenal, malonaldehyde, and related aldehydes. *Free Radic. Biol. Med.* **11(1)**, 81-128 (1991).
3. West, J.D. and Marnett, L.J. Endogenous reactive intermediates as modulators of cell signaling and cell death. *Chem. Res. Toxicol.* **19(2)**, 173-194 (2006).
4. Kolb, H.C. and Sharpless, K.B. The growing impact of click chemistry on drug discovery. *Drug Discov. Today* **8(24)**, 1128-1137 (2003).
5. Lutz, J.-F. and Zarafshani, Z. Efficient construction of therapeutics, bioconjugates, biomaterials and bioactive surfaces using azide-alkyne "click" chemistry. *Adv. Drug Deliv. Rev.* **60(9)**, 958-970 (2008).

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